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ABSTRACT

The Cooperative Alternative Education Center (CAEC) in Connecticut developed a building maintenance and carpentry vocational education program for adolescent special needs students with extreme learning, emotional, and social difficulties. Thirty-four students enrolled in the program, with a student-teacher ratio of 8:1, and classes met five times a week for forty minutes for an academic year. The curriculum was designed to teach skills such as safety, measurement, wood types, use of power and hand tools: design and construction of projects: general housekeeping: sanitation: building and grounds maintenance: management of equipment: and business and job interview skills. Evaluation of the project was based on pre- and posttests and student surveys. The evaluation addressed three central issues: (1) students' development of vocational skills: (2) students' development of generally more positive attitudes: and (3) students' development of general academic skills. According to the paper and pencil tests, students' academic skills and attitudes did not improve. The students in the CAEC program did exhibit significant gains in vocational skill development, however: and though general indicators showed no attitudinal change, students exhibited positive attitudes toward the vocational training they received. (KC)

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Implementation of a Carpentry and Building Maintenance Curriculum Within a Special Education Setting.

Final Report 1979-80

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All opinions expressed reflect the views of the authors and are not necessarily those of the State Department of Education.

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BACKGROUND

Statement of the Problem

A large population of secondary school students in Connecticut exhibit severe antisocial behaviors which cannot be adequately addressed in the normal classroom setting. According to the Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice, these students (many of whom exhibit learning disabilities) are prone to high rates of juvenile delinquency, and often abandon the school because of high degrees of academic, social, and emotional difficulties. School is avoided because it is a source of frustration, and, if not abandoned, becomes a place where the student significantly disturbs the educational process of others. Because of the conflict with the educational environment, by a very young age these students display a lack of motivation to learn, and experience a disassociation from the school system which often results in frequent suspensions and truancies. The normal school environment is ill equipped to handle the needs of these students. Large class sizes, teachers, counselors, and administrators who are not trained in dealing with extreme behaviors, peer group pressure, and negative labelling (both at a student and school level) all contribute in making the normal school environment an inappropriate setting for these students.

The students' view of education, and their frustrated educational experiences also prevent them from gaining the training necessary for occupational success. Teenage youth in this category have high rates of unemployment; when they are employed it is difficult for them to hold jobs; their skill levels are so low in particular occupational areas as to effectively prevent them from progress in the world of work. More so than most groups of students, these special students need training in vocational areas which can

provide them with the skills necessary to function in society. Moreover, vocational programs for these students should consider their special needs, and must integrate vocational training with strategies designed to improve their social behavior.

The Cooperative Alternative Education Center (CAEC), a facility operated by Cooperative Educational Services (CES), a regional educational service center in southwestern Connecticut, is a school which is designed for adolescent youth who exhibit extreme learning, emotional, and social difficulties. In 1978, under the mini-grant program of the Connecticut State Department of Education, Bureau of Vocational Education, CES developed a Building Maintenance and Carpentry vocational curriculum for adolescent special need students. The curriculum was designed to represent the first stage in a three year program to implement this curriculum in the CES catchment area. In 1979, CES received a grant award to implement this curriculum through CAEC. Prior to this time, no vocational school or regular high school in Connecticut addressed the vocational needs of this extreme population.

Project Setting

The CAEC program is housed in the Byram School in Greenwich, Connecticut. CAEC presently serves 42 students, aged 12-19, of which approximately 85% are males. These students are referred from seven school districts in the CES catchment area: Greenwich, New Canaan, Norwalk, Ridgefield, Stamford, Weston, and Wilton. The overall program maintains 15 teachers and 1 counselor. Students receive academic and social training via a daily schedule which can be modified daily or hourly to respond to particular behavioral situations. The typical school day for students includes physical education, academic training, vocational training, cooking, and daily counseling sessions, all within 40 minute class periods.

Student behavior places extreme demands on the CAEC staff. Fighting and abusive language are common, and take place between students, and between students and teachers. Teachers often must provide physical restraint to the students, and isolate them so that they will not be a danger to staff or other students.

The vocational program at CAEC occupies two classrooms, served by a Carpentry Instructor, and Building Maintenance Instructor.

Goals and Objectives

The general goal of the project is to provide vocational and academic training for learning disabled students with behavioral problems.

Objectives included in the funding proposal for the 1979-80 year were:

1. Establish an Advisory Committee of professionals and labor representatives to assist in development and implementation of the project.
2. Hire Project Director, Carpentry Instructor and Building Maintenance/ Custodial Service Instructor.
3. Hire part-time Psycho-educational Counselor.
4. Train Project Director and Staff in behavioral management techniques and performance objective writing.
5. Develop long term goals for the entire year and lesson plans, teaching strategies and performance objectives in Carpentry and Building Maintenance/Custodial Services for 1st trimester.
6. Provide orientation to students exposing them to a broad range of occupations in the fields of Carpentry, Building Maintenance/Custodial Services.
7. Assign students to instructional groups.
8. Instruct students in 1st trimester skills areas.
9. Develop teaching strategies, lesson plans and performance objectives for 2nd trimester in Carpentry and Building Maintenance/Custodial Services.
10. Instruct students in 2nd trimester skills areas.
11. Develop teaching strategies, lesson plans and performance objectives for 3rd trimester in Carpentry and Building Maintenance/Custodial Services.

12. Instruct students in 3rd trimester skill areas.

13. Assess students' progress and achievement during the course of the project.

14. Assess students' progress and achievement at the end of the first year.

15. Prepare final report for State Department of Education,Division of Vocational Education.

PROCESS EVALUATION

The vocational program at CAEC supplements the academic activities with an opportunity to explore future areas of employment and to obtain direct experience in these areas. The program trains students in the areas of carpentry and building maintenance. This curriculum has been developed to serve as a bridge between school and work. The vocational training offers the opportunity to begin acquiring skills that can be transferred to employment situations.

Staffing and In-Service Training.

Upon project funding, the Unit Coordinator and Head Teacher interviewed applicants for the positions of Project Director, Carpentry Instructor, and Building Maintenance Instructor. The personnel hired to fill these positions were:

Project Director -Mr. Otha Meadows
Building Maintenance Instructor- Mr. Mirvet Muca
Carpentry Instructor-Mr. Phillip Schlissel
Psychoeducational Counselor-Mr. Thomas Lynch

Job functions of staff members are contained in Appendix A.

The Project Director and Project Staff received ongoing training in the areas of behavior management and the writing of performance objectives. Staff training in these areas was conducted by Mr. Thomas Lynch, the psychoeducational counselor, beginning August 23, 1979.

Training in the area of behavior management was implemented

daily using a three-step process:

1) Exposure of personnel to theory, technique and procedure--this has been accomplished through the use of presentations utilizing handouts, blackboard, overhead projector and group discussions.

2) Modeling and role playing utilizing behavior management techniques in a simulated classroom situation. The psycho-educational counselor would demonstrate appropriate use of techniques while assuming the role of the classroom instructor. Each staff member would then take a turn playing the instructor, and group members would provide input on the individual's performance.

3) In vivo application--Instructors utilize the techniques in the classroom situation. On various occasions, the psycho-educational counselor would observe the class and its conclusion, and offer feedback to the instructor.

As the primary intervention strategy, CAEC employs a comprehensive behavior management system, the main component of which is a Token Economy. Tokens are awarded for appropriate behavior and verbal classroom participation. In addition, social reinforcement such as verbal praise accompanies the awarding of tokens. The amount of points awarded is contigent upon the response of the student and his/her ability to perform the desired behavior. Components of this behavior management system were taught during training. These included:

Introduction-operant conditioning, contigency contracting

Motivational Plan-token economy, social reinforcement,response cost

Counseling Plan-rap sessions, problem solving approaches,self-awareness, reality therapy, rational emotive counseling, interpersonal growth groups, modeling and role playing

Transitional Plan-honor status, tracer system, transitional reviews

A detailed description of these components is on file at CES.

The writing and development of short term performance objectives were also taught during staff training, as follows:

I. Performance Objectives

1. Rationale
2. Format and criteria
3. Development of objectives
4. Feedback and revision of objectives

II. Lesson Plans

1. Format of weekly plans
2. Content-daily outline, materials, methods

Ongoing follow-up meetings were held during the year to review and modify lesson plans. Plans were also reviewed weekly by the psychoeducational counselor or the Project Director.

Detailed reports of the above training were completed by the psychoeducational counselor, and contain information on dates, topic areas, staff present, and comments. These reports are on file with Cooperative Educational Services.

Additional problem-solving sessions were conducted during informal monthly meetings held by the Project Director. Monthly memos were exchanged between the teaching staff and Project Director concerning teaching strategies, short-term goals, and projections of problems or needed materials. The Project Director reviewed the memos and met with the staff to discuss any particular problem. These memos also provided a basis for ordering supplies. Memos are on file at CES.

Program Implementation.

Two of CAEC's classrooms provided the setting for the program. Classes met throughout the year, 5 times a week for 40 minute periods. The students were assigned to instructional groups by their reading comprehension achievement levels, as determined by the Woodcock Johnson Battery and the Wide Range Achievement Test. Class sizes were initially in a ratio of 8 students to 1 instructor. Seventeen students enrolled in each section (17-Carpentry, 17-Building Maintenance).

Each class received a full year of training in their section. Attrition and poor attendance, common to this student population (See Obstacles section), usually make the ratio 4 or 5 students to 1 instructor. These classes initially taught elementary safety, shop procedures, and measurement skills. This section of the training concurrently provided remedial math and reading support.

Specific skill areas for carpentry and building maintenance training were culled from the vocational education curriculum developed through the 1978 mini-grant. This curriculum is on file at CAEC. Curricular skill areas were as follows:

Carpentry Skill Areas

General Safety in the shop
Safety in using hand tools
Measurement skills
Types of wood and wood joints
Types and uses of hand tools
Types and uses of power tools
Design and construction of project
using hand and power tools
Business skills
Job interview skills

Building Maintenance Skill Areas

General safety
Measurement skills
General housekeeping
Orientation of materials and equipment
Sanitation
Maintenance of buildings and grounds
Management of equipment
Business skills
Job interview skills

Student proficiency in the skill area was determined by a teacher-made examination which was administered in a pre-post format. The students who gained profiency then progressed to "hands-on" instruction in the use of hand tools, power tools, cleaning materials, etc. Students' progress throughout the year was judged on the basis of their accomplishment of pre-determined performance objectives.

In addition to the behavior modification system already discussed, special effort was made to use high interest, low reading level instructional materials, in order to effectively address the remedial needs of the students. A list of instructional materials is contained in Appendix B.

The final part of the school year was used to improve communication skills, business skills, and job interview techniques. This section of the training was deemed necessary due to the interpersonal communication difficulties of the CAEC population.

Guest Speakers and Field Trips.

Two guest speakers came to CAEC towards the end of the school year to discuss their fields. Tom Yoczik, Labor Representative for the Carpenters Union, discussed the cooperative efforts of unions. Mr. Schartar, a representative from the Building Maintenance Union, discussed the various fields and their earning potentials.

Plans for field trips, made towards the end of the year, were thwarted for a variety of reasons, including time limitations of the various workmen, insurance problems with having students observing at a work site, and a general apprehension on the part of workmen about the problems which might arise with students from a special education setting.

Advisory Committee.

An advisory committee comprised of local professionals was established to assist in the development, implementation, and publicity of the project. Committee members were:

Otha Meadows, Project Director
Jackie Douvosion, Community Interest
Gary Clemons, Minority Concerns
Carolyn Nevins, Sex Equity
Thomas Lynch, Psychoeducational Counselor
John Kerpchar, Vocational-Technical Schools
James Mullen, Unit Director of Secondary Education

The first meeting of the committee was held on December 13, 1979. At this meeting, an overview of the goals and objectives of C.A.E.C. program was presented by Mr.Thomas Lynch, Consultant. Following the program overview, Mr. Otha Meadows, Project Director, presented the goals, objectives and rationale of the project. This was followed by a question and answer discussion of the program and project.

The second meeting of the committee was held on April 25, 1980. A description of the vocational training procedure was provided by the Project Director and psycho educational counselor. An explanation of the skills emphasized (safety, measurement, the use of basic tools, and communication skills) was given. A discussion of the budget revealed the monies were primarily used on materials, salaries, publicity, and evaluation. Sex equity was also discussed (see Obstacles section). The role of the committee was viewed by the Project Director as one of public relations and aiding in the establishment of an employer referral network.

Attendance at these meetings was sporadic, due to illness and difficulty in scheduling. Becuase of this low attendance, the advisory committee did not offer all the assistance that was originally intended.

Employment Services.

Contact with potential employers was made during the first project year by project staff, advisory committee members, and the guest speakers (from Carpentry and Building Maintenance Unions). Employers had been notified of the special needs of the students, the extent of their training, and had been alerted to possible differences in their behaviors or capacities due to their special education handicapping conditions. Project staff, working with the contacted employees, attempted to make placements for

summer jobs for project students.

Obstacles.

Sex equity.

The project attempted to achieve sex equity by the methods employed to interest students in the various vocational education programs. Students received information orienting them to career possibilities, and were then free to select a vocational training program. The females in the program (5) opted for a cooking program. During the year, two females expressed interest in the carpentry program, but one left CAEC and one changed her mind. As of May 1980, only one female student was left in the entire CAEC program and she expressed no desire for either the carpentry or building maintenance programs.

Attitude.

One of the greatest obstacles reported by the instructors was the negative attitude toward the manual labor involved in the programs. This attitude was especially pronounced in the building maintenance section, where job duties for the students included mopping and cleaning lunchrooms and lavatories. The problem lessened as the year progressed and the students gained a sense of pride in their reponsibilities. They also reconsidered their negative stance when they learned of the possible salary ranges of custodial and building services managers/supervisors.

Another attitudinal problem was experienced when students learned that "hands-on" experience was allowed only after they had demonstrated proficiency in safety measures and math skills. While students were frustrated at first, the lure of projects was strong motivation to attain the necessary skills.

Attrition and Attendance

This problem is not unique to vocational education programs. Many instructors expressed difficulty in teaching the constantly changing population in CAEC, due to new referrals and students returning to their sending districts. Absenteeism is also a common problem in programs serving special needs adolescents. These problems were addressed through the use of high-interest instructional methods and materials, and the flexibility of instruction that allowed individual attention at the student's appropriate level of training.

Scheduling

The standard class period of 40 minutes was generally perceived as being inadequate, especially during "hands-on" experience. The student-teacher ratio also was considered too high during initial training and "hands-on" experience, as the students need individualized attention to address their specific needs and skill levels. As competency became greater, however, students could again work with a minimum of supervision.

PRODUCT EVALUATION

This program sought to impact on the cognitive and affective domains of the target population. It also sought to provide efficient and cost-effective services to a population to whom training in vocational skill areas would not have been accessible. The evaluation design paralleled these intents, in an effort to measure the cognitive and affective student gains, and to examine the program's costs and student selection criteria in relation to other vocational education programs.

Cognitive Domain

Cognitive data was collected from teacher-made tests, standardized achievement tests, and an analysis of a comparable group's test scores.

1) Students were pre-tested in the designated skill areas of their curriculum with teacher-made tests, and post-tested at the end of each of three trimesters. A dependant T-test was performed on the data. This analysis was designed to examine student growth in each of the skill areas taught through the curriculum. Students demonstrated improvement in all skill areas tested with all T probabilities less that .05, indicating a statistically significant amount of growth occurred (see Figure I).

2) The Wide Range Achievement Test was used to measure students' achievement level through time (over a two-year period) via a time series analysis. Students were tested in the fall and spring of 1978-79 and 1979-80 school years with the WRAT. A regression analysis was performed on the data to compare growth ratios. This analysis was used to determine if significantly greater growth occurred since the onset of the vocational program, that is, if the program positively affected the academic achievement of the students in the program. (See Figure II.) No significant

Figure 1

PRE-POST TRIMESTER DATA

Building Maintenance/Custodial Services

SKILL AREA	NUMBER OF TEST ITEMS	MEAN PRE-TEST SCORE	MEAN POST-TEST SCORE	T-SCORE	DF
Math Skills	20	12.1	14.5	6.59*	16
Safety	20	13.1	17.0	12.52*	16
General Housekeeping	20	12.8	15.4	6.01*	15
Floor Care	20	11.1	14.4	7.98*	13
Restroom Care	20	12.1	15.5	8.0 *	12
Classroom Care	20	12.8	16.3	12.67*	14
Window Cleaning	20	14.0	16.1	10.69*	15
Wall Cleaning	20	13.4	16.3	8.17*	15
Carpet Care	20	10.4	14.9	8.33*	15

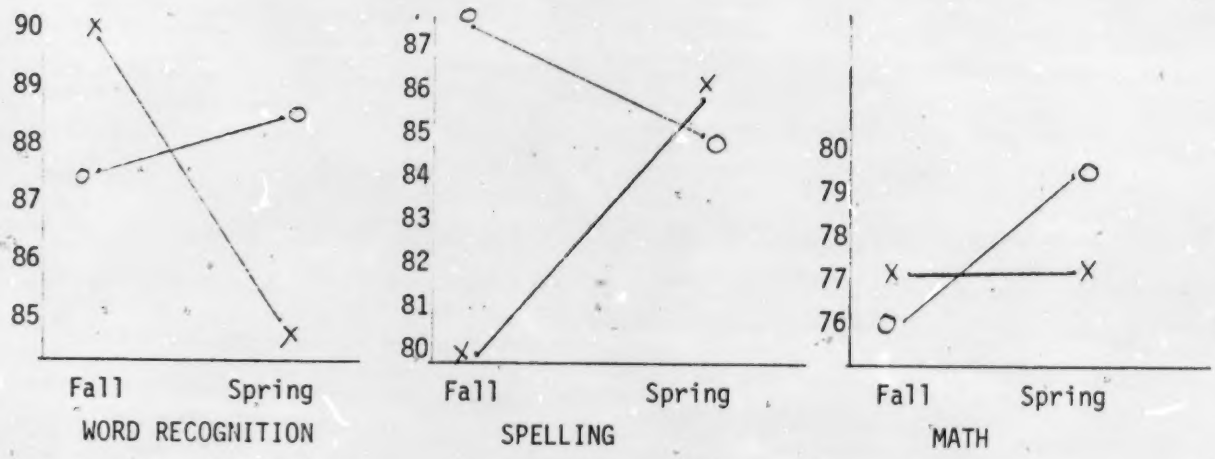
Carpentry

SKILL AREA	NUMBER OF TEST ITEMS	MEAN PRE-TEST SCORE	MEAN POST-TEST SCORE	T-SCORE	DF
Math Skills	20	14.0	14.9	2.33*	15
Safety	25	12.3	20.4	7.96*	15
Measurements	20	11.4	15.0	7.52*	15
Hand Tools	10	2.8	6.3	9.3 *	15
Joints	20	6.5	13.2	5.53*	10
Sanding and Finishing	25	9.2	18.0	7.16*	11
Design of a Project	20	7.0	15.8	10.65*	11

* $p < .05$

differences were found in any of the three subtests, though the predicted pattern of growth occurred in word recognition and math. (math F (1,35) = 0.23, $p < .63$, word recognition F (1,35) = 0.17 , $p < .69$; spelling F (1,35) = 0.49, $p < .49$).

Figure II
Time Series Analysis



WIDE RANGE ACHIEVEMENT SCORES, CAEC STUDENTS
X 1978-79 O 1979-80

3) The Metropolitan Achievement Test was given to both the CAEC group and a comparable contrast group. An analysis of variance was performed to correct for any differences between the group's pre-test scores. This analysis was used to determine if growth during the project year was greater than the average growth of a group in a similar educational setting who did not receive any vocational training. No significant differences were found in the two subtests of this analysis. (math F (1,32) = o.45, $p < .506$; reading F (1,32) = 0.98, $p < .329$).

Some difficulties arise when analyzing standardized achievement data. The populations tested exhibit both emotional and learning handicaps. Either of these conditions alone can produce a greater than normal variance in test scores. In addition, the CAEC population is largely lower middle class. The cultural deprivations of this group can also adversely affect the reliability of test data. These three handicaps exhibited in a single group can produce extreme variations, and the data should be viewed with this in mind.

Affective Domain. Affective data was collected via the administration of the Coopersmith Self-Esteem Inventory. This is designed to measure a student's self concept. Via a dependent T-test, mean scores for pre and post testing were examined to determine if any change occurred during the project year. In addition, a similar control group of students was administered the Inventory on a pre-post basis, and the data (pre-post, between treatment and contrast groups), were analyzed via an independent T-test. These statistical tests revealed no significant difference either within groups or between groups on pre-post data.

Surveys and Reports

A student questionnaire was developed by the project evaluator to assess the appropriateness of the curriculum and the teaching materials. The questionnaire was disseminated at the end of each trimester by the Project Director.

Frequency distributions for the student survey data are grouped in Figure III Students were asked if they felt that they would be able to use each listed

skill in a future job. As the surveys indicate, most students felt positively about all aspects of the training. When asked what would have made the training better, most students answered longer class periods and more equipment.

The project staff was also interviewed to determine the appropriateness of the curriculum and teaching materials, as well as to comment on various aspects of the project. Project teachers were surveyed via a structured interview developed and conducted by the project evaluator. The purpose of this interview was to determine the teachers' view of the appropriateness of several components of the program.

The teachers indicated that their training was highly appropriate, and responded well to the needs of the target population. The teachers felt, however, that they expected too much from the students in relation to the long range goals. The ability level of the students, they felt,was lower than they had expected. Weekly lesson plans in the carpentry training occasionally were found to deviate from week to week, causing students to shift into new projects before the old ones had been completely finished.

The two teachers differed slightly in their view of the appropriateness of the program at job training. One teacher felt that less than half the students were truly ready to enter the labor force with the skills they had attained. He viewed practical experiences offered through the program as useful, but stated that more tools were needed in order for the training to be more useful.

The other teacher agreed that only a handful of students were ready for jobs, but placed part of the responsibility on the students to pick up on the training and learn. He saw the practical experiences offered as particularly effective, and felt that they were abundant with "hands-on" activities.

Both teachers commented on the texts and written materials used in the program. Both felt that ancillary materials (slides, tapes, etc.) were needed. One teacher felt the texts used were too high in level considering the reading ability of the population.

Guest speakers, a feature of the program, were both viewed extremely positively by the teachers. The topics were seen as useful, motivating, and that the speakers worked well with the students and stressed the importance of team work in the completion of projects.

A general problem noted by one teacher concerned the difficulty in getting building materials on time.

Staff performance was also evaluated by the Project Director, with the help of the psychoeducational counselor. These evaluations were developed by Cooperative Educational Services, and are based on contracted performance objectives, as presented in the State Plan for Teacher Evaluation.

In addition to daily staff meetings and monthly project meetings, twice a year the student's individual gains were detailed in Educational Progress Reports (EPR's).

Reporting on the progress of the project was made by the project staff during monthly on-site visitations by the evaluation team, advisory committee meetings, and an interim report sent to the State Department of Education in January 1980.

Figure III

Results of Student Questionnaires

CARPENTRY

Skill Area	no	maybe	probably	yes
general shop safety	0	1	1	11
hand tool safety	0	0	1	12
measurement skills	0	4	3	6
math skills	1	2	1	9
types of wood and wood joints	0	5	2	5
types and uses of hand tools	0	2	4	6
types and uses of power tools	0	6	3	7
design and construction of project	0	5	3	3
business skills	0	2	3	5
job interview skills	0	1	7	2

BUILDING MAINTENANCE

Skill Area	no	maybe	probably	yes
general safety	0	2	3	8
measurement skills	1	3	1	8
general housekeeping	0	2	4	7
orientation of materials and equipment	0	4	2	5
sanitation	1	3	1	6
maintenance of buildings and grounds	0	2	1	8
care and cleaning of buildings	2	8	3	1
business skills	1	7	2	4
job interview skills	1	4	2	6

Cost Analysis.

A comparison of another vocational program was attempted to determine if CAEC's program was cost-effective. The school used for comparison purposes was the J.M. Wright Technical School in Stamford, Connecticut, a regional vocational-technical school. Differences in the programs are outlined below, and listed in Figure III.

Cost per pupil.

The cost of training each student in one vocational class is $290.00 for Wright Technical and $1681.00 for CAEC. This cost covers personnel, materials and supplies, and other daily operating costs (office supplies, etc.) It does not cover initial equipment costs, rent, or any evaluation and reporting.

Personnel:pupil ratios; class time.

The class sizes are one teacher to 29 students at Wright Technical and one teacher for 8 students at CAEC. Wright Technical employs one counselor and one administrator for each 270 students. CAEC employs one administrator for each 30 students, and one counselor for each 150 students (in a .2 FTE position).

Class periods are 50 minutes long at Wright Technical and 40 minutes at CAEC.

Student characteristics.

The different types of students serviced by these programs are reflected in the two sets of entrance criteria. Wright Technical attempts to attract students with a positive attitude and good achievement record. New, more stringent entrance criteria have recently been adopted to ensure selection of these types of students. The new system consists of three measures--observation of grades and

attendance records from the sending school; an interview with a Wright Technical guidance counselor; and a vocational entrance exam. From these three measures, a student is given a rank and chosen accordingly. This system would cause a student exhibiting a learning disability or emotional disturbance to be given a low rank and probably exclusion.

Those students who can pass the entrance exam and have adequate grades from their sending school, yet exhibit learning disabilities, are remediated within a resource room for however many periods are needed. Students with emotional disturbances which disrupt classes are referred to another school.

In contrast, entrance to CAEC is made by an initial referral after all resources in the sending school district have been exhausted. Prospective students and their families are interviewed by the CAEC staff jointly and then separately. Staff then make a decision to accept or reject the student. The final acceptance is left up to the student and his/her family. The referred students exhibit learning problems, have excessive truancy, often exhibit acting out behaviors, are sometimes withdrawn, passive-resistant, or involved in the use of soft drugs. These students all receive intervention during all CAEC activities. Behavior modification is used, and staff provide an individualized curriculum based on student needs. A more complete description of these activities can be found in the In-Service Training section of this report.

Figure IV
Cost Analysis

	WRIGHT TECHNICAL	CAEC
Cost per pupil, per vocational class	$290.00	$1681.00
Teacher:pupil ratio	1:29	1:8
Administrator:pupil ratio	1:270	1:30
Counselor:pupil ratio	1:270	1:150
Class time	50 minutes	40 minutes
Student characteristics:		
school attitude	positive	negative
school achievement	average or better	below average
learning disabilities	few, receive aid in resource room	majority, receive aid within program
emotional disturbances	none	majority, receive aid within program

As the figure indicates, the regional vocational-technical schools in Connecticut offer vocational training much more inexpensively (per student) than does CAEC. The CAEC program,though more expensive, is providing services to an entirely different type of student than the regional voc-techs. The needs of these students, especially as they relate to exhibited behavior and leaning disabilities, require a much lower teacher-student ration, and demands that the staff be trained to deal with extreme behaviors. Because of the student needs, administrator and counselor staff-student ratios are also lower than in a voc-tech school. Though increased staff drives up the cost of providing services to these students, vocational training would appear to be difficult without the close supervision low ratios provide.

SUMMARY

First year programs, especially those involving extreme student populations, are often difficult to evaluate in a summative way. Many ideas and procedures are pilot tested and often revised, abandoned, or replaced. This is especially true of the vocational program at CAEC, where a controlled learning environment was being established which would provide support to students to learn vocational skills. First year evaluation can play a very helpful role in monitoring the formative processes utilized in setting up and implementing the program in its first year.

The summative data collected this year, however, is nevertheless highly valuable in documenting program growth, but perhaps more importantly, in helping the project staff and evaluation team to focus in more closely on the student needs, thereby helping to focus the program direction more sharply for the future. The summative design for this year's evaluation addressed three central issues: 1) students' development of vocational skills, 2) students' development of generally more positive attitudes, and 3) students' development of general academic skills.

According to paper and pencil tests, academic skills and attitudes did not improve in the students. The CAEC program however, deals with a student who exhibits extreme behaviors, and who has extreme social and emotional problems and disturbances. Of primary importance is to mediate the behavioral problems, to help the student begin to deal effectively with his/her own problems, and to help the student develop a sense of internalized responsibility. At a fundamental level, the affective needs of the student are first and foremost.

Students of this kind are primed for deliquency and unemployment, unless they can latch on to even the most basic work skills which will allow them to function effectively in society. The students in the CAEC program did exhibit significant gains in vocational skill development and, though general indicators of attitudinal charge showed no change, exhibited positive attitudes towards the vocational training they received. Students slowly developed a sense of accomplishment though the acquisition of skills which they perceive have a place in their futures.

APPENDIX A

Job Functions

Appendix A

JOB FUNCTIONS

Project Director, Otha Meadows

Qualifications: Carpentry and Building Maintenance/Custodial services experience, teaching experience.

Job Description:

- review curriculum with staff
- prepare teaching strategies
- order supplies and materials
- maintain records and files
- review staff lesson plans weekly
- evaluate staff and students
- write quarterly progress reports on staff and students
- assist in preparing final report
- instruct students

Psycho-educational counselor, Thomas Lynch

Qualifications: B.S. in Secondary Education; M.S. in Counseling and guidance; psychological and teaching experience.

Job Description: Provide assistance to Project Director and staff in the development of:

- long term goals
- performance objectives
- lesson plans
- teaching strategies
- oral/written exams
- train Project Director and staff in behavior management techniques

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Carpentry Instructor, Philip Schlissel
Building Maintenance/Custodial Services Instructor, Mirvet Muca

Qualifications: Experience in skill area, teaching experience

Job Description:

- learn behavior modification procedures
- instruct students in skill area
- other responsibilities designated to all CAEC instructors

APPENDIX B

Instructional Materials

-Texts used for Carpentry

Working with Wood, Herbert S. Horowitz, Frank E. Richards Publishing Company, Inc., 1970.

*Wood Technology, Glenn E. Baker, L. Dayle Yeager Bobbs-Merrill Educational Publishing, 1976.

*Wood Technology - Student's manual (same as above)

How to Work with Tools and Wood, Robert Campbell, N.H. Mager, Pocket Book, 1977.

Carpenters and Builders Library, John E. Ball, Howards W. Sams & Co., 1965.

Wood Furniture, Finishing Refinishing Repairing, James E. Brumbaugh, Howard W. Sams & Co., 1974.

Basic Wood working, Frank M. Puttman, Ed. D., Westinghouse Learning Corporation, 1969.

Safety Practices and Procedures in School Shops, Joseph T. Johnson, John B. Mancuso, State of New Jersey, Dept. of Education, Division of Vocational Education, 1968.

Background for Builders, same as above

-Texts used for Building Maintenance/Custodial Services

Cleaning Specification used by Union Carbide Corp., N.Y., The Years, 1980-81.

* Cleaning Management 1979, 1980, 17915-B Sky Park Blvd., Irving, Cal. 92714

* Building Maintenance, by Jules Grovetz, Theovore Audel & Co. 4300 West 62nd Street, Indianapolis, Indiana, 1977.

Measured Work in Building Management, by Alden Elstrom Assoc. Consulting Industrial Engineers, Minneapolis, Minnesota, 1968.

UCC Safety Program, 1979. Union Carbide Corp., 270 Park Avenue, NY

Custodial Training, Dept. of Vocational Education, State Dept. of Education, Columbus, Ohio. 1963.

Building Operating Management, Oct., Nov., Dec., 1979, Jan., Feb., March, April, 1980, 2100 West Florist Avenue, Milwaukee, Wisconsin 53209.

* indicates especially appropriate or useful texts

APPENDIX C

Sample Student Survey Instrument

Carpentry Student Survey - CAEC

3rd Trimester

The C.E.S. project staff would like to know your feelings about your carpentry training. This information will be helpful in improving this training in the future.

Directions: For each question, please check the box that describes how you feel. Space has been provided for your comments on certain questions.

1. Business Skills. Do you feel you will be able to use your skills in a future job?

no	maybe	probably	yes
☐	☐	☐	☐

2. Job interview skills. Do you feel you will be able to use these skills in a future job?

no	maybe	probably	yes
☐	☐	☐	☐

These are the skill areas your course has covered this year:

- math skills
- general safety
- measurements
- safety with hand tools
- types and uses of hand tools
- types of wood and wood joints
- types and uses of power tools
- design and construction of project using hand and power tools
- business skills
- job interview skills

3. What skill area did you learn the most from this year?

_____

4. What skill area did you learn the least from this year?

_____

5. Was the written work helpful in learning the skills listed above?

not sure	no	yes, somewhat	yes, a lot
☐	☐	☐	☐

6. Was the "hands-on" experience helpful in learning the skills listed above?

not sure	no	yes, somewhat	yes, a lot
☐	☐	☐	☐

7. What do you feel would have made this training better?

_____

APPENDIX D

Program Brochure

COOPERATIVE EDUCATIONAL SERVICES

VOCATIONAL EDUCATION PROGRAM

COOPERATIVE ALTERNATIVE
EDUCATION CENTER

Funded in part by a grant from the
Connecticut State Department of Education
Bureau of Vocational Education

INTRODUCTION

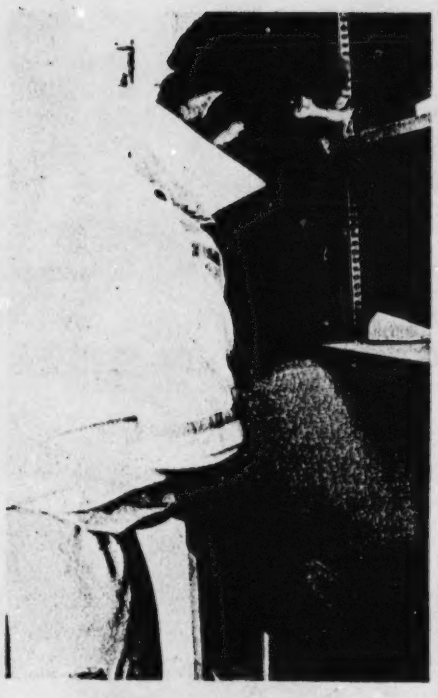
The Cooperative Educational Services' Alternative Educational Center (C.A.E.C.) was established in 1974 to provide special education programming for adolescents who exhibit inappropriate social behavior and/or oppositional behavior. Associated with the aforementioned management problems may be areas of academic weaknesses. The program is not intended for the severely acting-out student who may inhibit the progress of productivity of the program. The age range is from 13-18 years of age. The catchment area is Southwestern Connecticut. The program which is located in the Byram School in Greenwich offers a wide variety of academic courses utilizing behavioral management systems such as the token economy. The goal of the Cooperative Alternative Education Center is to assist the student in obtaining social and vocational skills in order to deal more effectively with specific life situations.

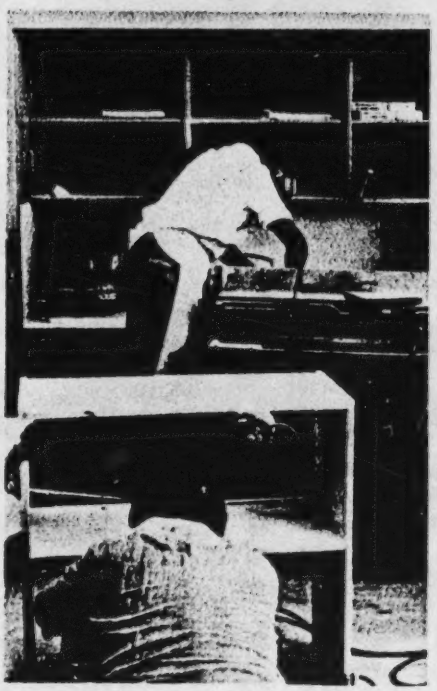
The Cooperative Alternative Education Center is staffed by teachers certified in the areas of Special Education, Secondary Education, Counseling, and School Psychology.

Activities at C.A.E.C. include intervention using behavior modification to increase the frequency of socially appropriate behavior. Additionally, the staff provide an individualized curriculum based on specific needs. The staff also provides individualized and group counseling. Vocational education and career awareness classes are scheduled into the students academic plan. The primary goal of the program is to assist the sending school in returning their students to the regular school environment.

ACADEMIC

The student who attends the Learning Center is required to register for English, Social Studies, Mathematics, Social Sciences, and Physical Education. Supporting these core courses are a group of electives from which the student can choose. These include: Food Preparation, Carpentry, Building Maintenance/Custodial Services, and a variety of science courses.





VOCATIONAL COMPONENT

To assist in the development of these students, C.E.S. submitted and received funding from the Connecticut State Department of Vocational Education to develop and implement a building maintenance and carpentry curriculum.

The curriculum is designed to provide students with the opportunity to work and learn in a supervised on-the-job training situation. A committee of parents, professionals, and skilled workers was established to aide in the development of the curriculum. Pre and post tests were developed to evaluate the impact of the curriculum design and measure the skill gains of the students.

REFERRAL AND ADMISSION PROCEDURES

The primary sources for referrals to the C.A.E.C. program are local school districts in the Southwestern Connecticut area.

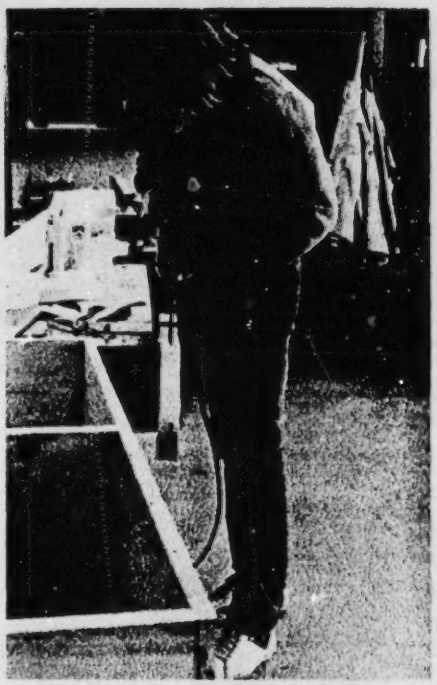
The referrals are made by the school systems after all other resources in the local school have been exhausted. School officials compile social history, psychoeducational data, medical data, anecdotal reports, an Individual Educational Plan, and any other pertinent information concerning the student. Parents and school district officials are interviewed by the program staff to assess the appropriateness of the placement. A final decision relative to placement is made by Cooperative Educational Services' Child Study Team. If a student is accepted, the decision to attend is left to the child and family.

GOALS/ACTIVITIES

During the first year of the program students who are enrolled in the building maintenance/carpentry program are involved in learning the basic fundamentals of these respective vocations and their proper usage, which in addition will be supplemented by other academic areas (English, Science, Social Studies). Priority attention is given to Math and English weaknesses.

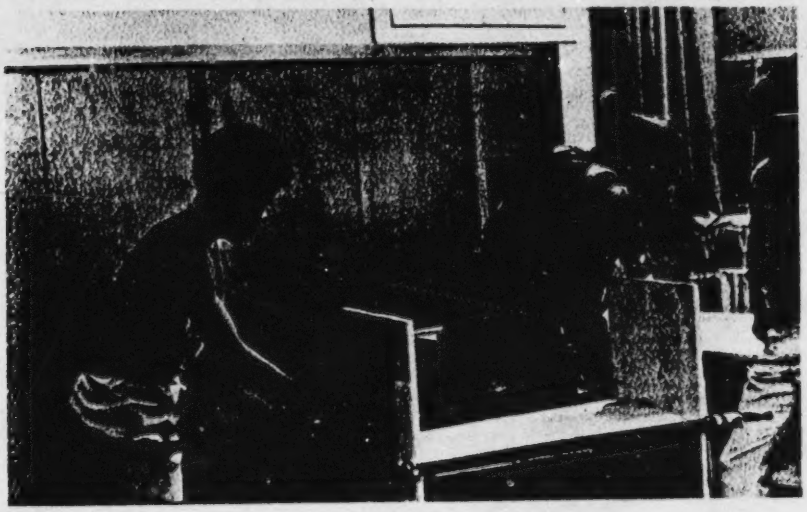
Upon satisfactory completion of in-house projects and class assignments students worked on outside projects relative to these vocational areas.

Labor professionals made on-site visitations to provide students with better insight on the scope and range of occupations in the fields of carpentry and building maintenance. The program maintains open lines of communication with representatives of labor unions, to insure direct job referral and placement services.



Research continues to support that programming for adolescents with special needs must be given the highest degree of priority in terms of academic and vocational education.

Public schools in Southwestern Connecticut have turned to C.E.S. because they realize that internally they do not have sufficient resources to provide viable vocational programming for adolescents with special needs. As a Regional Education Service Center, C.E.S. is actively aware of the needs of these individuals and are concerned with their personal development and direction.



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OTHA H. MEADOWS, PROJECT DIRECTOR

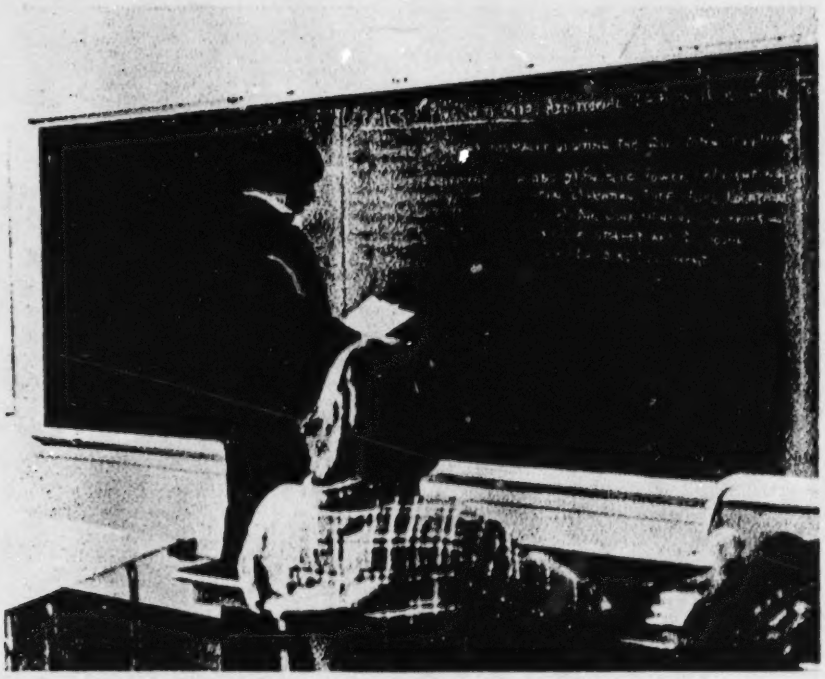
STAFF

James F. Mullen ..... Unit Coordinator/School Psychologist

Philip Schlissel ..... Carpentry Instructor

Mirv Muca ..... B/M Instructor

Thomas J. Lynch ..... Psych/Educational Counselor



ADVISORY COMMITTEE

Lynn Nevis ..... Sex Equity

Jackie Douvosion ..... Community Interest

Garry Clemmons ..... Minority Concerns

John Kerpchar ..... State Board of Vocational Education